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ABSTRACT

During the 1978-1979 school year an early identification program for pupils in kindergarten and grade 1 was designed to select those students who would have difficulty with the London, Canada, mathematics or language arts curriculum. The identification program, based primarily on teachers' judgments, was extended in the two subsequent years to cover grades 2 and 3. During this period a number of studies have provided data concerning the concurrent and predictive validity of the early identification process. The study reported here represents a further attempt to establish predictive validity by relating teachers' ratings to students' scores on standardized tests of academic aptitude and achievement. In addition, some detailed analyses of the pattern of students' early identification ratings during the periods from 1976 through 1979 and from 1980 through 1981 are reported, and the relationship of these ratings to students' sex, age, ability, and achievement is discussed. (Author/MP)

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EARLY IDENTIFICATION SYSTEM: THREE-YEAR FOLLOWUP OF THE GRADE 1 CLASS OF 1978-79

R. G. Stennett, Ph.D. & L. M. Earl

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Educational Research Services
London Board of Education

During the 1978-79 school year an Early Identification process, based primarily on teachers' judgments, was applied in kindergarten and grade 1. In the two subsequent years, the process was extended to cover grades 2 and 3. During this period a number of reports (Stennett & Earl, 1978, 1979, 1980, 1981) have described the findings and provided some evidence concerning the concurrent and predictive validity of the process. This study represents a further attempt to establish the predictive validity of the identification process by relating teachers' ratings to students' scores on standardized tests of academic aptitude and achievement. In addition, some detailed analyses of the pattern of students' early identification ratings over the 1978-79 to 1980-81 years and the relationship of these ratings to students' sex, age, ability and achievement are reported.

METHOD

Sample

All 2771 students who were enrolled in grade 1 during the 1978-79 school year and for whom Early Identification (EID) ratings were available were included in the study. For some analyses those 279 who were repeating grade 1 during 1978-79 were excluded.

Followup Procedures and Availability of Data

The following procedures were used to ensure that as many as possible of the grade 1 class of 1978-79 were located during the 1981-82

school year and that as much relevant data as possible was collected:

(1) Using the original 1978-79 EID file as a base, EID ratings for 1979-80 and 1980-81 were added for all students who were screened during those two years.

(2) EID ratings done during November to January of the 1981-82 school year in grades 1 to 3 were used to locate any students who had, since 1978-79, repeated one or more grades.

(3) Listings of the system-wide ability and achievement testing done during the 1980-81 school year were reviewed to locate any students who had been accelerated.

(4) Lists of all students enrolled in primary-level special education classes were reviewed to locate any students in the grade 1 class of 1978-79 who might have had such training during the school years 1979-80 to 1981-82.

(5) Since most of the 1978-79 grade 1 class were enrolled in grade 4 during the 1981-82 school year, results of the system-wide, October 1981 administration of the Canadian Tests of Basic Skills (CTBS) and the Otis Ability Test were obtained for them from the Measurement and Evaluation service.

Despite these procedures, it was not possible to determine the current location and educational status of all of the students enrolled in grade 1 in 1978-79. Specifically, those students who were enrolled but not present when the system-wide testing was done during 1981-82 were lost to the followup as were those students who simply left the London system during any of the three followup years and did not return. Unfortunately, the precise extent of this 'loss' cannot be specified.

A further significant limitation of this study is that we do not have standardized ability and achievement measures for any student who repeated one or more of the grades 1 to 3. These students, of course, constitute a particularly important part of the sample for establishing predictive validity. For this reason, additional analyses will be conducted during the 1982-83 school year when such data will become available.

An additional limitation to this study is that, with the exception of grade repetition and special class placement, no data are available regarding any remedial interventions which may have been provided to the 'high risk' pupils. The absence of these data makes interpretation of the various three-year patterns of EID ratings difficult and tends to reduce estimates of the predictive validity of the ratings by an unknown amount.

Variables Available for Study

The following variables were available for study: sex; month of birth; year of birth; chronological age at the beginning of each year 1978 to 1980; early identification ratings[1] for language and mathematics combined for 1978-79 and separate ratings for reading and mathematics for the school years 1979-80 and 1980-81; school location for the years 1978 to 1981...from which a measure of mobility was derived; a code to indicate

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[1]EID ratings, made by classroom teachers and school teams separately for language/reading and mathematics, consist of a simple scale, as follows:

0 = insufficient contact with students to make a judgment
1 = student will be ready, by the end of the school year, for the work of the next school year
2 = student *may not be ready*, by the end of the school year, for the work of the next school year
3 = it is *quite certain* that the student *will not be ready*, by the end of the school year, for the work of the next school year.

whether or not a student had repeated, accelerated or been in a special class; OTIS IQ and standard score; CTBS grade 4 standard scores for Reading Comprehension, Usage, Mathematics Computation (London Math), Mathematics Problem Solving and an average of these four scores; an estimate of mental age as of September for each of the years 1978 to 1980 (based on grade 4 OTIS IQ).

Data Analyses

All data analyses were conducted using standard statistical programs, primarily those contained in SPSS.

RESULTS

Status in September, 1981

Table 1 shows the status of the entire cohort of 1978-79 grade 1 students as of September 1981, by school team EID rating in grade 1. Table 2 presents the same information for those students who were still in the system in September 1981. A number of pertinent observations can be made from these data: (1) Three years after grade 1, almost one-quarter (23.3%) of the students have left the system. (2) About two-thirds of the students (64.2%) were enrolled in regular grade 4 classes. (3) About 8% of the students were repeating either grade 2 or grade 3. (4) About 4% were enrolled in special education classes. (5) Only .3% had been accelerated and were enrolled in grade 5.

Of the students still in the system in the fall of 1981, 84% were in grade 4 or 5, 10.4% were repeating either grade 2 or 3 and 5.6% were enrolled in special education classes.

It is also quite clear that the September 1981 status of the students is related very significantly to the EID rating they received in

grade 1. Thus, while 95% of the students rated 1 were in grade 4 at the time of followup, only 16% of students rated 3 were so enrolled. Conversely, while less than 3% of the students rated 1 had repeated a grade, 54% of students rated 3 had been held back. Whereas almost 30% of students rated 3 were enrolled in special education classes, less than 2% of students rated 1 were so enrolled.

EID Ratings and Student Mobility

Table 3 gives a distribution of students by grade 1 EID rating and number of different schools attended over the years 1978-79 to 1981-82. It is apparent from these data that: (1) Only about 60% of students remain in the same school for each of the four years studied. (2) A significant minority of students (9.2%) attended 3 or 4 different schools over the four years studied. (3) The tendency for students to move from school to school is significantly related to students' grade 1 EID rating. The percentage of students rated 3 who attended 3 or 4 schools during the years 1978 to 1981 is over four times as high as for students rated 1 (28.1 vs. 6.5).

It should be noted that the measure of student mobility is a conservative one since it is based solely on the student's location at the time the EID ratings were reported.

Any interpretation of the relationship between EID ratings and student mobility should be made with caution since it is not clear whether or not mobility is a cause or merely a correlate of poor achievement. In addition, some student mobility, as measured in this study, may be explained by students changing schools to enter a special education class.

Three-year Patterns of EID Ratings and Their Relationship to Student Mobility and Achievement

In order to study the patterns of EID ratings over a three-year period and assess their relationship to students' ability and achievement, the following procedure was adopted. For grade 1, a student who was rated 1 was given a code of 1; a student rated either 2 or 3 was given a code of 2. For grades 2 and 3, a student who was rated 1 in both reading and mathematics was given a code of 1; a student who received a rating of either 2 or 3 in either reading or mathematics was given a code of 2. Thus, for each of the three years a student could get a code of either 1 or 2. The codes for each year were then combined to indicate the pattern of the student's EID ratings over the three years. For example, if a student's EID ratings were 3 for grade 1, 1 for reading and 1 for mathematics in grade 2, and 2 for reading and 1 for mathematics in grade 3, his pattern of codes would be 212. Given this procedure for simplifying the student's EID ratings for each year into a 1 or 2, there are eight possible patterns ranging from 111 to 222.

When the simplified three-year pattern had been derived for each student, all students were simply grouped together by pattern and a number of statistics were calculated for each group. Since ability and achievement measures were only available for those students who were enrolled in grade 4 in 1981-82, all other students were excluded from the analysis. The reader should note that excluding such students (i.e. those repeating grade 2 or 3 and those enrolled in special education classes) significantly reduces the degree to which differences among students with differing patterns of EID ratings can emerge.

Table 4 shows the characteristics of students with different three-year patterns of simplified EID ratings. An examination of these data indicates that, in general, the more 'deviant' the pattern (i.e., the more 2s it contains) the more likely the students exhibiting the pattern are: to be boys, to have been born in the last half of the year, to have repeated grade 1, and to do less well on standardized tests of achievement and ability.

The relationships between the three-year patterns of EID ratings and single measures of achievement and ability are depicted in Figure 1. While only 3.2% of students with a 111 pattern had an average CTBS standard score (S.S.) ≤50 (i.e., 1 or more standard deviations below the mean), 61.2% of students with a 222 pattern had scores that low. Similarly, while the 111 group's average mental age at the beginning of grade 3 was 107.4 months, the mean mental age of the 222 group was 87.3. It is of interest to note that while, at the beginning of grade 1, the mean mental age difference between these two extreme groups was 15.4 months, by the beginning of grade 3 the mean difference increased to 20.1 months.

DISCUSSION

The data presented in this report indicate very strong relationships between team EID ratings made in grade 1 and students' subsequent academic 'status' and achievement three years later. Because standardized measures of ability and achievement were not available for a critical part of the sample (i.e., students who were repeating a grade or who were in special classes), the relationships studied are likely to be stronger than the current data suggest. For this reason, this same cohort of

students will be followed until more complete data become available.

It should be noted that some relatively complex interactions between the variables studied make straightforward interpretation of the data difficult. For example, different values of sex, month of birth and IQ can combine to produce similar 'expected' EID ratings. A bright boy, born in December may achieve in a very similar fashion to a girl of average ability born in January, with this trend becoming less apparent as the students progress from grade to grade.

An additional difficulty in characterizing the strength of the relationships between EID ratings and students' academic success is that the distributions of the variables involved preclude the use of familiar statistics. For example, because the distribution of EID ratings is J-shaped, month of birth is distributed in a rectalinear fashion and achievement test data are distributed normally, one cannot simply calculate correlation coefficients to describe the relationships among them. One is left, therefore, with having to make a 'non-statistical' judgment about the predictive validity of the EID ratings. From a practical point of view, it seems quite clear that when the classroom teacher and/or school team give an EID rating of 2 or 3 to a student there is sufficient cause for a careful review of his educational program. When two or more teachers give successive such ratings the review is imperative.

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TABLE 1 Status of All 1978-79 Grade 1 Students As of September 1981 by Grade 1 Team Early Identification Rating.

Status As of Sept., 1981	Team EID Rating in Grade 1						Totals	
	1		2		3			
	N	%	N	%	N	%	N	%
In Grade 4	1571	74.6	178	45.9	30	10.9	1779	64.2
In Special Education Class	29	1.4	35	9.0	55	19.9	119	4.3
Accelerated, in Grade 5	7	.3	0	0.0	0	0.0	7	.3
Repeating Either Grade 2 or 3	47	2.2	73	18.8	100	36.2	220	7.9
Left The System	453	21.5	102	26.3	91	33.0	646	23.3
Totals	2107	100.0	388	100.0	276	100.0	2771	100.0

Table 2 Status of 1978-79 Grade 1 Students Still in the System as of September 1981 by Grade 1 Team Early Identification Rating.

Status As of Sept., 1981	Team EID Rating in Grade 1						Totals	
	1		2		3			
	N	%	N	%	N	%	N	%
In Grade 4	1571	95.0	178	62.2	30	16.2	1779	83.7
In Special Education Class	29	1.8	35	12.2	55	29.7	119	5.6
Accelerated, in Grade 5	7	.4	0	0.0	0	0.0	7	.3
Repeating Either Grade 2 or 3	47	2.8	73	25.5	100	54.1	220	10.4
Totals	1654	100.0	286	99.9	185	100.0	2125	100.0

TABLE 3 Distribution of Students by Team Early Identification Rating in Grade 1 and Number of Different Schools Attended From 1978-79 to 1981-82.

Number of Different Schools Attended 1978-79 to 1981-82	Team EID Rating in Grade 1						Totals	
	1		2		3			
	N	%	N	%	N	%	N	%
1	1139	66.6	110	40.3	19	12.4	1268	59.4
2	459	26.9	122	44.7	91	59.4	672	31.5
3	99	5.8	37	13.6	36	23.5	172	8.1
4	12	.7	4	1.5	7	4.6	23	1.1
Totals	1709	100.0	273	100.1	153	99.9	2135	100.1

TABLE 4 Characteristics of Students With Various Simplified Three-Year Patterns of Early Identification Ratings

Variables	Pattern of Early Identification Ratings							
	111	211	121	112	221	212	122	222
Number of Cases (Total = 1566)	1073	49	96	136	37	37	89	49
Percent of All Cases	68.5	3.1	6.1	8.7	2.4	2.4	5.7	3.1
Percent Male	47.4	57.1	53.1	53.7	56.8	59.5	61.8	49.0
Percent Born July to December	48.7	59.2	51.1	64.7	54.0	56.7	57.3	67.4
Percent Repeating Grade 1	3.5	6.1	7.3	15.4	13.5	16.2	23.6	10.2
% Grade 2 Reading Rating of 2 or 3	0.0	0.0	70.8	0.0	91.9	0.0	87.6	91.8
% Grade 2 Math Rating of 2 or 3	0.0	0.0	51.1	0.0	54.1	0.0	64.1	61.2
% Grade 3 Reading Rating of 2 or 3	0.0	0.0	0.0	81.6	0.0	75.7	91.0	85.7
% Grade 3 Math Rating of 2 or 3	0.0	0.0	0.0	56.6	0.0	67.6	54.0	61.3
% With Reading Comp. s.s. ≤50	8.5	24.5	25.5	31.1	56.8	56.8	56.8	71.4
% With Usage s.s. ≤50	8.9	29.2	31.2	35.8	33.3	47.2	53.4	59.6
% London Math s.s. ≤50	8.5	18.8	24.2	27.6	30.5	29.7	40.9	55.1
% Math Problem Solving s.s. ≤50	10.5	22.9	20.2	29.6	47.6	37.8	46.0	46.8
% Average s.s. ≤50	3.2	12.2	21.9	23.5	32.4	32.4	43.8	61.2
Mean OTIS IQ	108.5	99.1	97.3	95.6	92.3	90.7	90.9	88.9
Mean Mental Age, Grade 1 (Sept.)	81.4	74.3	72.7	71.8	69.4	69.1	69.4	66.0
Mean Mental Age, Grade 2 (Sept.)	94.4	86.4	84.4	83.3	80.5	80.1	80.3	76.8
Mean Mental Age, Grade 3 (Sept.)	107.4	98.3	96.0	94.7	91.5	90.9	91.2	87.3

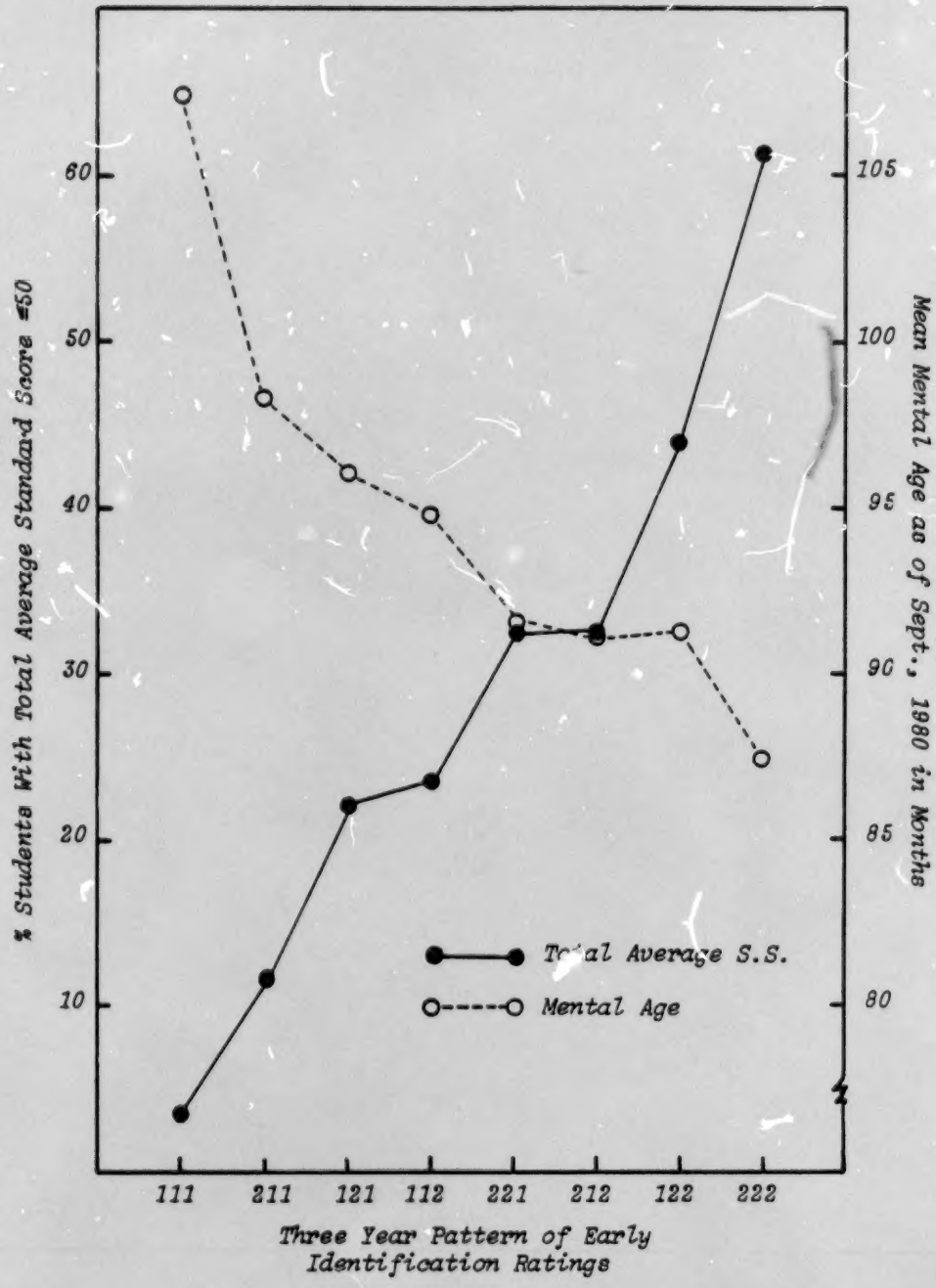

FIGURE 1 Relationships of Pattern of EID Ratings to Achievement and Mental Age.